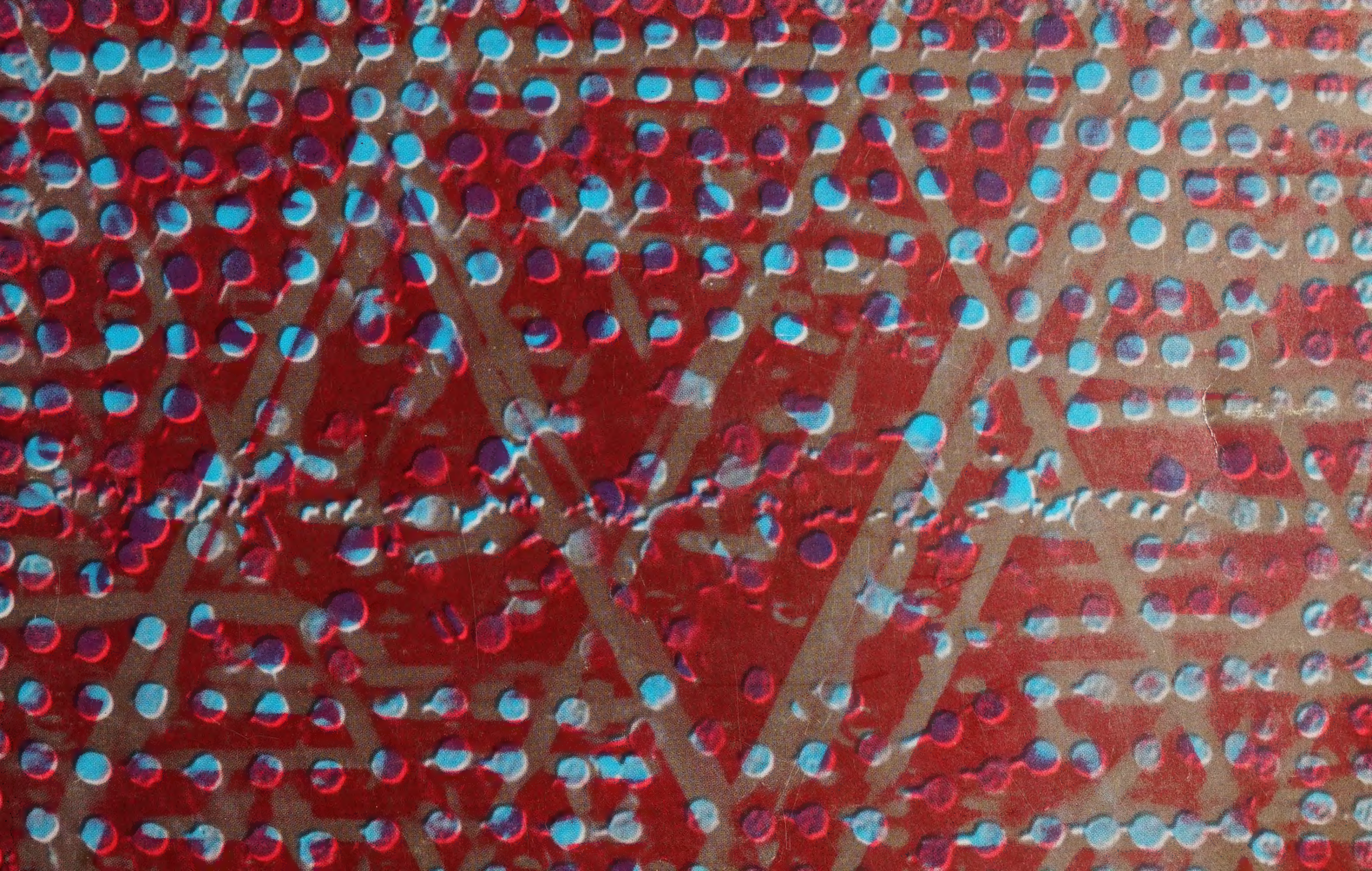

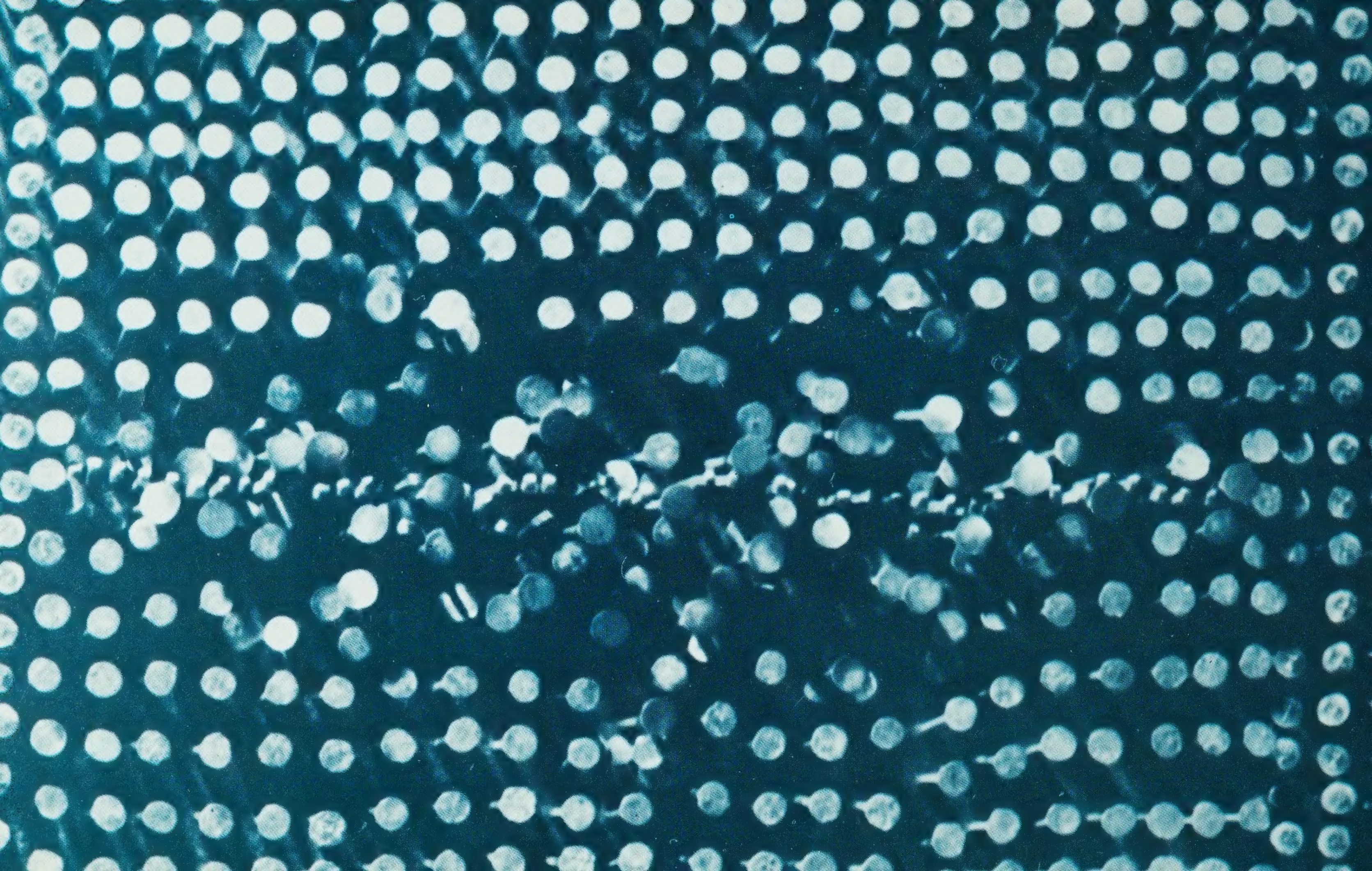

Art and Engineering

259

February 13th to March 14th, 1965

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https://archive.org/details/artengineeringar00artg

Art and Engineering

The Art Gallery of Toronto in co-operation with The Association of Professional Engineers of the Province of Ontario

Preface

J. H. WAGHORNE, P.ENG.
President,
The Association of Professional Engineers
of the Province of Ontario

Why should Professional Engineers be interested in an art show? There are probably many good reasons which could be offered, but I prefer to look on 'Art and Engineering' as an outstanding opportunity for engineers to demonstrate a wider interest in the community which they themselves have had such a large part in building.

Although educated as a specialist in the practical application of scientific principles, the engineer is also a human being interested in the broader aspects of community life exemplified by the arts. The engineer has been represented as essentially practical: "If it works, never mind what it looks like". 'Art and Engineering' is an attempt to modify this impression and we hope will show that the Canadian engineer has made a significant contribution to our everyday environment far beyond the merely practical and functional.

The painters and sculptors represented in this exhibition have acknowledged in their works strong motivation by the intrinsic beauty of the mathematical forms such as circles, ellipses, rectangles, triangles, parabolas and hyperbolas used in engineering works and objects. The visual delight attainable with simple engineering shapes is generally taken for granted by most of us. It is left to the artist to re-awaken our awareness of the aesthetic delights of the twentieth century's technical revolution.

We, the Engineering Profession in Ontario, are honored by this privilege of co-operating with the Art Gallery of Toronto in the presentation of this exhibition. We are particularly appreciative of the help and guidance given to us by William Withrow, Director of the Art Gallery.

W. J. WITHROW
Director,
The Art Gallery of Toronto

The idea behind this exhibition is not new. Walter Gropius and Moholy-Nagy theorized extensively (as early as 1930) about the relationship between art and our industrialized society. Before this, Futurism briefly embraced the outer forms of modern engineering. In 1909 Marinetti wrote in *Le Figaro* "... a roaring motor car, which runs like a machine gun, is more beautiful than the Winged Victory of Samothrace ...". In Europe artists like Ferdinand Léger and Lyonel Feininger and in America Charles Sheeler and Joseph Stella among others devoted their creative energies to investigating the aesthetics of engineering forms.

In Canada our artists have, until recently, been almost exclusively inspired by nature. It is not surprising that in a new country with such a vast expanse of virgin wilderness, our first national school of painting, the Group of Seven, should make its mark with landscapes.

Since the war a small but important group of Canadian painters and sculptors have been motivated by the new man-made environment in which the majority of us live. The world that shapes our vision today consists of hydro towers and bridges, storage tanks and automobiles, highways and factories – all shapes created by engineers according to the demands of mathematical formulae. The artist, super-sensitive to the visual environment, may react like Gerald Gladstone to the beauty of certain space age machines. Others, like Molinari, reject the ugly disorder of our urban scene and seek the quietude of first principles: simplified geometric shapes and strong pure colours. Some, like Drenters, working with traditional subject matter may unconsciously find the shapes they create influenced by the shapes of rockets and missiles. Nor does this include yet another group who for various reasons have been attracted to the materials and techniques of applied science.

The photographs in this exhibition are of familiar things to which we have often been exposed but perhaps have never really seen. It is the role of the artist to present us with another way of using our eyes. We see the object. The artist sees the form: its shape and texture, the space it occupies and the dynamic relationship it may have with other forms around it. Each artist reacts differently. In a few cases the photographs may suggest direct inspiration. In most, the intention is to indicate a possible relationship formerly unnoticed.

The President, Mr J. H. Waghorne, P.Eng., and his council are to be congratulated for their adventurous spirit and fine sense of public responsibility. We want especially to thank Anthes Imperial Limited of St. Catharines, Ontario, for supplying the scaffolding which has resulted in the display in front of the Art Gallery.

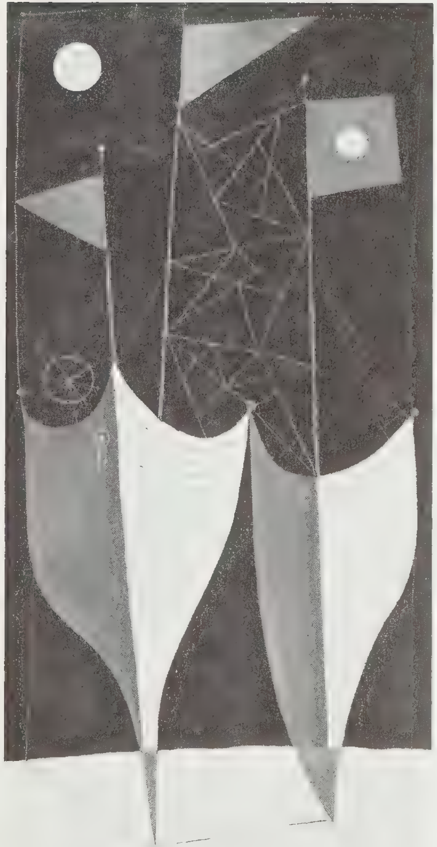
Our thanks are also extended to the many engineering firms who supplied the blueprints for the exhibition, Mr Don Redfern, Mr Blake Goodings, committee members, Mr Ron Vickers, photographer, and to Mr James Williamson, artist, who was in charge of the installation. But, as always in an exhibition, it is to the generous lenders we owe our greatest debt of gratitude.

The dimensions in the catalogue are those given by the owners of the works. Height precedes width.

Bertram Binning/1909-

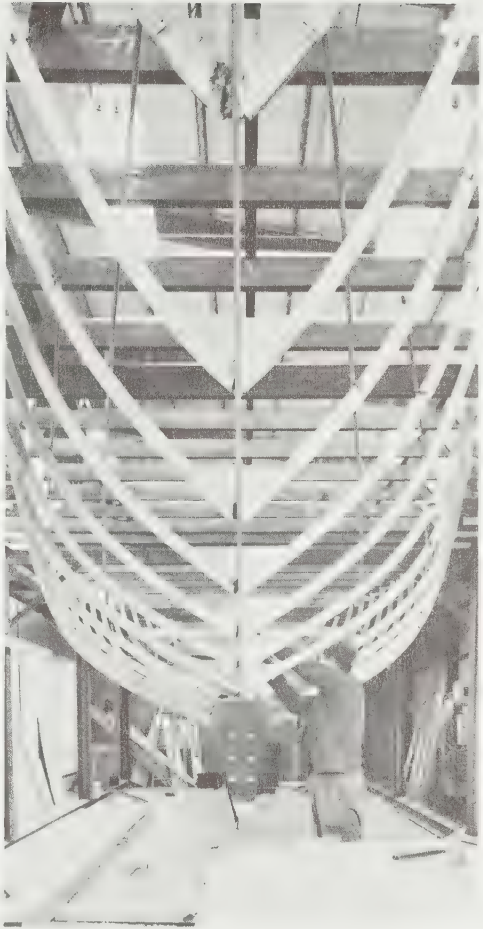
"I feel my painting in this particular period of about ten years ago was more influenced by contemporary architecture than by engineering itself — or perhaps, I suspect, by the character of modern engineering principles as they are evident in architecture today; such characteristics as the clean, hard definition of form and the calculated accuracy in space relationship.

"It seems to me this brings up the more important question of the rebirth of the classical tradition (as opposed to the romantic) in modern terms: the possibility of its return to modern mathematical and scientific relevance as opposed to the earlier Aristotelian hypothesis."



1A/**Ghost Ships**

1949
Oil on paperboard,
36 x 17 in.
The Art Gallery of Toronto
Gift from the Albert H.
Robson Memorial
Subscription Fund, 1951



1B/**Aluminum yacht in frame**

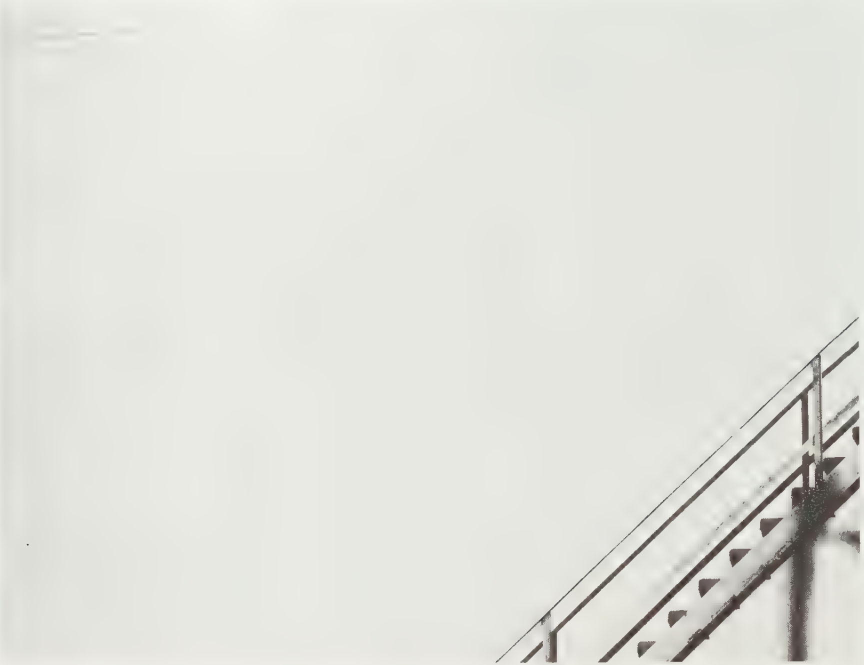
Cuthbertson and Cassian
Limited,
Pt. Credit, Ontario

Ronald Bloore/1925-

"My only intention while executing a painting is to make a preconceived image function formally as a painting. The appearance of each work has been consciously determined before execution and the general concept is not significantly altered by the requirements of material limitations."

2A/**Small White Cross**

1962
Oil on masonite.
17-5/8 x 48 in.
The Art Gallery of Toronto
Gift from the
McLean Foundation, 1962

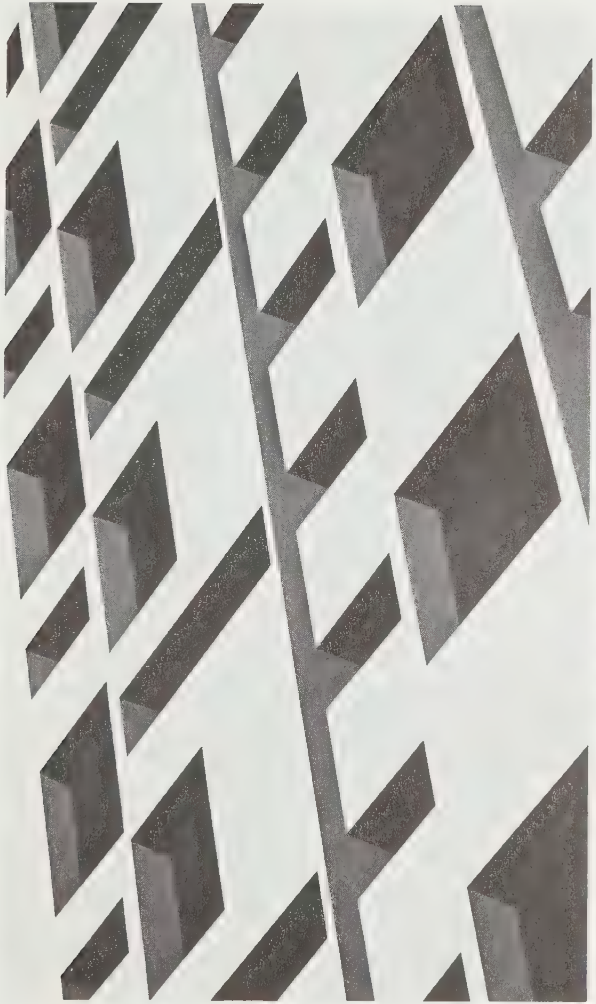


2B/**Elias Rogers Company Limited – Finch Avenue Depot: storage tank**

Diameter 150 ft., height 48 ft.
Fabricator: Toronto Iron
Works Limited

Sheldon Cohen /1935-

"My interpretation of our surroundings is my stepping stone to creation."

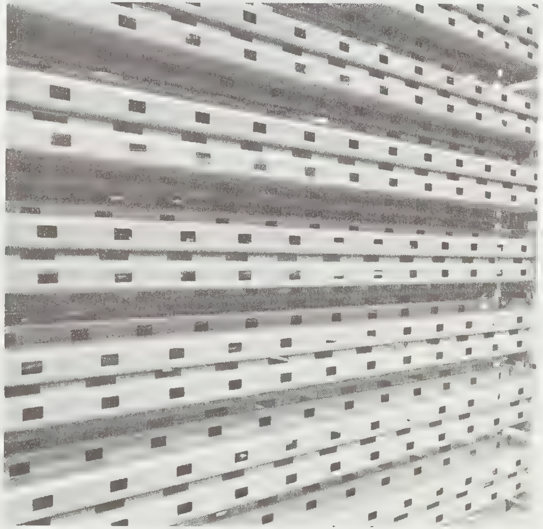


3A/#2

1964
Acrylic latex on canvas,
57 x 33 in.
Jerrold Morris International
Gallery Limited

3B/**Boltless palette racking**

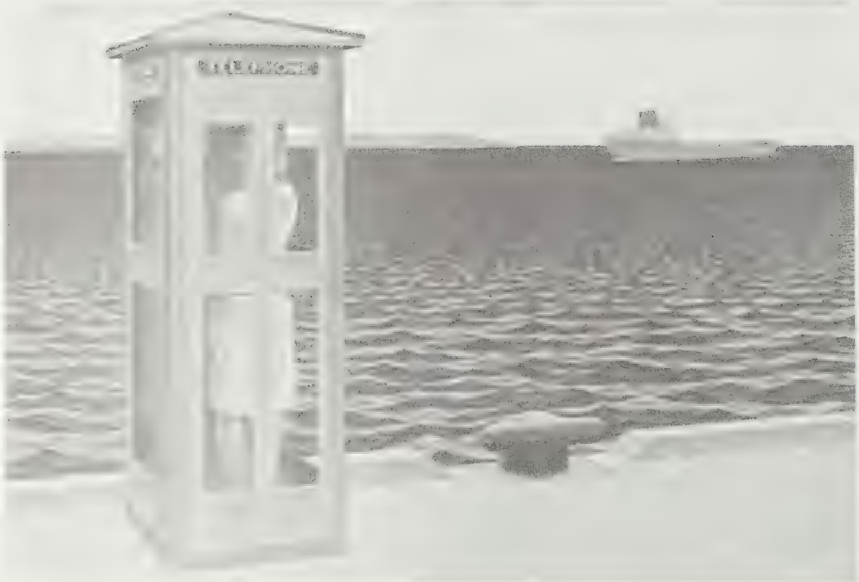
Redirack Industries Limited



Alex Colville /1920-

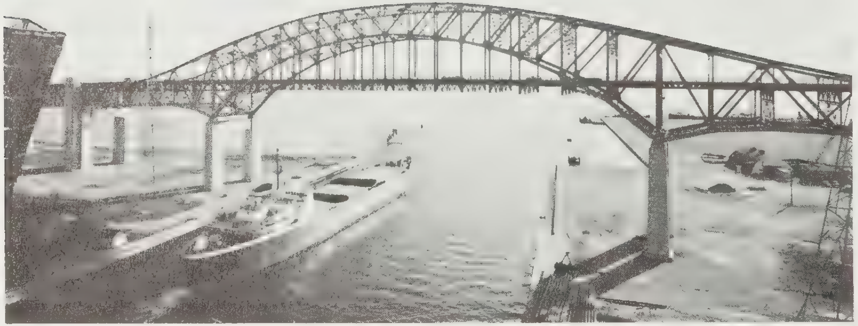
"I think that it is existentially inevitable that engineered objects should appear in some way in art. They are part of our experience."

4A / **Departure**

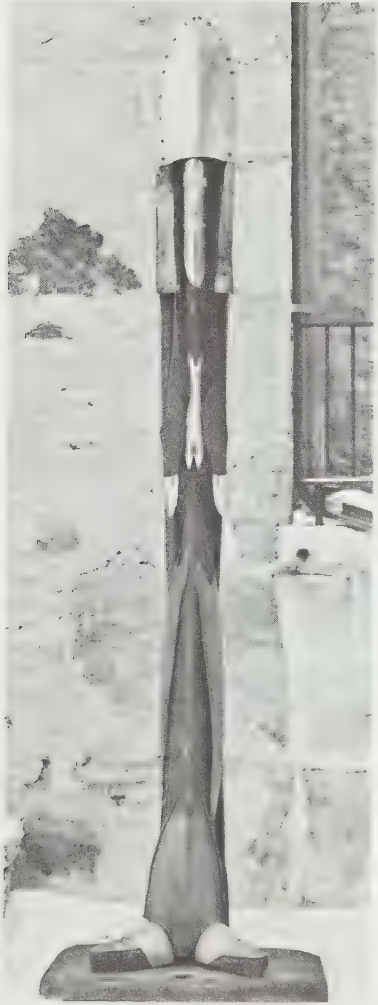


1962
Oil and synthetic resin,
18 x 26 in.
Collection of the Artist

4B / **The Burlington Bay Skyway**



Foundation of Canada
Engineering Corporation
Limited

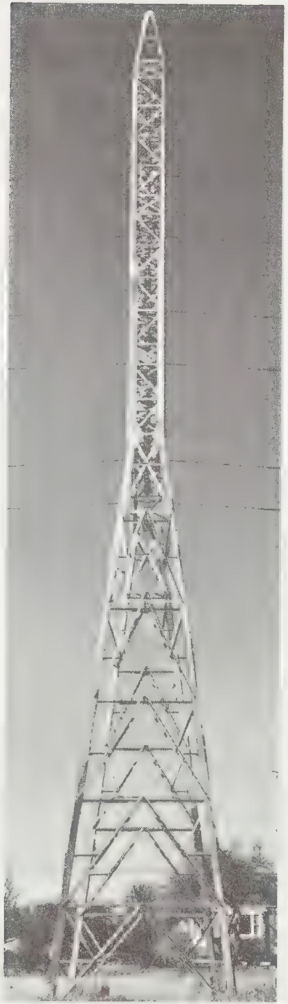


5A/**Bishop**

1960-63
Steel, copper and burnt wood,
height 108 in.
Collection Dorothy Cameron
Gallery Limited

5B/**230,000 volt transmission tower**

Ontario Hydro



Yosef Drenters/1929-

"The relationship between the shapes of sections of machinery and the forms of humans and animals is so astonishingly close (levers are like elbows and wheels are like working minds), that I cannot resist making use of these technical elements. In my sculptures, I try to express what I see and feel about it all."

André Eysackers /1928-

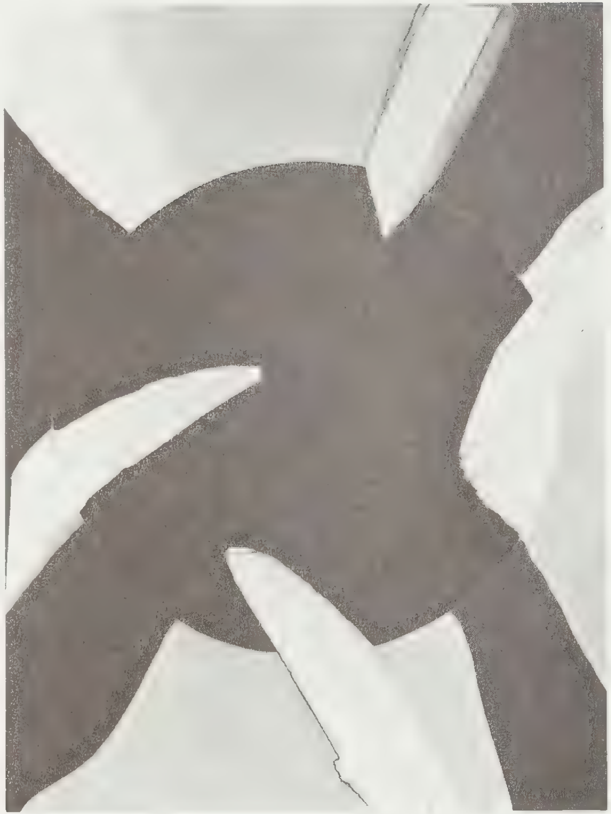
"It is not so much the shapes which are created by the engineers but the future which is created by them. Shapes by engineers being functional and direct are the new consciousness of our time.

"As an artist I do not understand the science of their function; therefore I think it only possible to provide a balanced relationship between science and the individual.

"Since we have as yet no valid philosophy to back us up as to the eventual outcome of science, we can only equalize it by a vision of the whole, in which each value can only be counted through the relations of it to other values such as an art of pure relations."

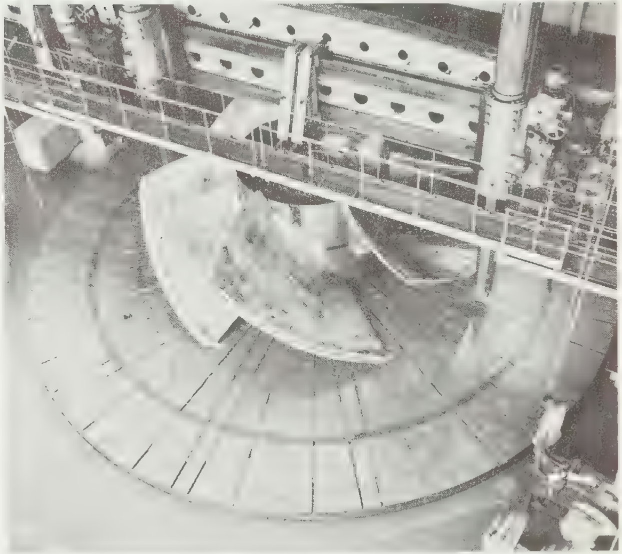
6A / **Rotating Forms**

1964 Oil on canvas, 54 x 40 in. Collection of the Artist



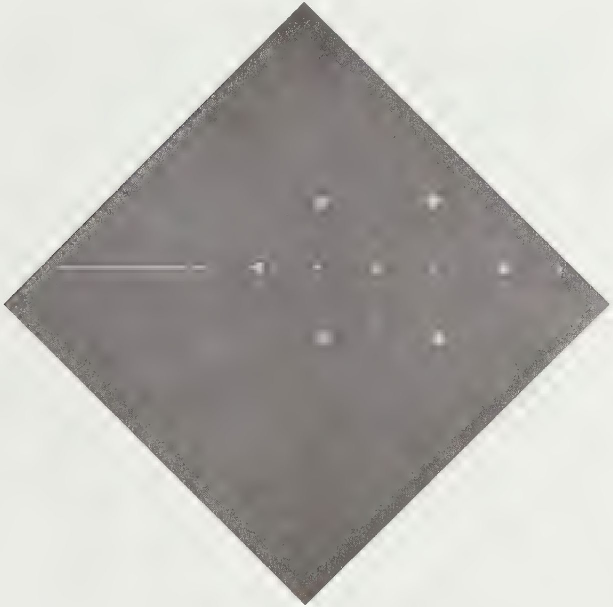
6B / **Propeller-type hydraulic turbine runner**

John Inglis Company Limited – English Electric Canada Division



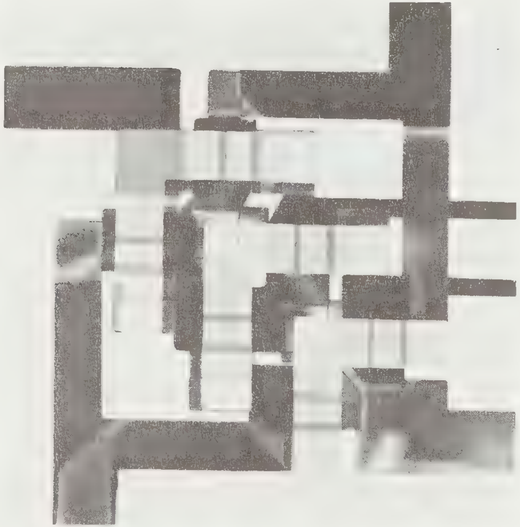
7A / **Green Traveller**

1964 Acrylic latex on canvas, 56 x 56 in. Gallery Moos, Limited



7B / **Vacuum deposited thin film superconducting computer circuit device**

Ferranti-Packard Electric Limited



Yves Gaucher / 1934-

"The motive of my work is to establish a relationship of color energy-quantity-quality co-ordinated into rhythmic pulsations.

"Color-energies resist each other; one gains in intensity for a duration, compressing opposed energies to a point of disappearance until the latter can overcome the former which has weakened itself in its expansion. This action repeats itself in varying recurrences, thus forming rhythmic patterns. When a relationship is achieved with a number of intensities of different durations, in the same context, then the reading becomes of a contrapuntal nature.

"Each image develops into a hundred and more readings; sometimes in a slow and subterraneous rhythm, sometimes in a frantic and hallucinating pace."

Gerald Gladstone/1929-

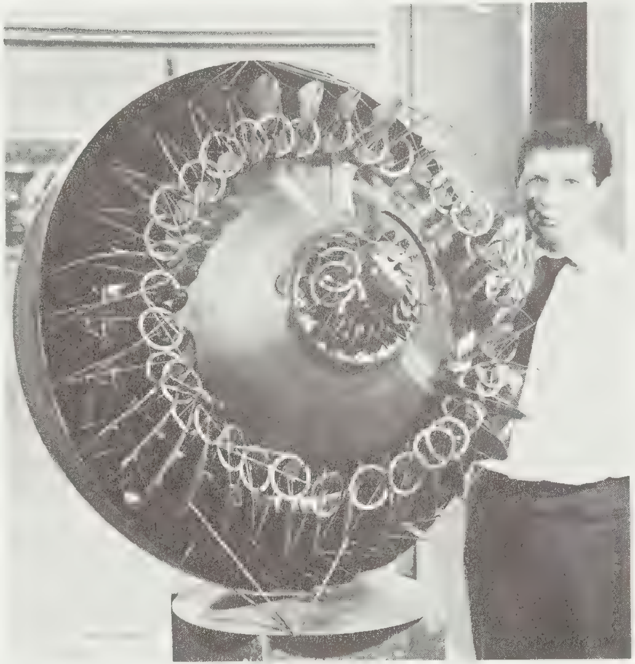
"Science can, and will, change all of art in this century, probably to the point of destroying art as a communicative instrument. Works of art have not followed through as extensions of man's insight as effectively as works of science. Art has relinquished its position as a philosophical direction to the more sophisticated and aggressive sciences and modern music.

"Paintings and sculptures that look and feel like acceptably correct works of art confirm the complete breakdown of the reason for using works of art to enlarge the vision and use of this planet and ourselves.

"The artist, like the rest of society, must recognize scientific information and machinery to produce as exciting works, and make clearer the reasons and feelings of modern shapes that produce newer attitudes."

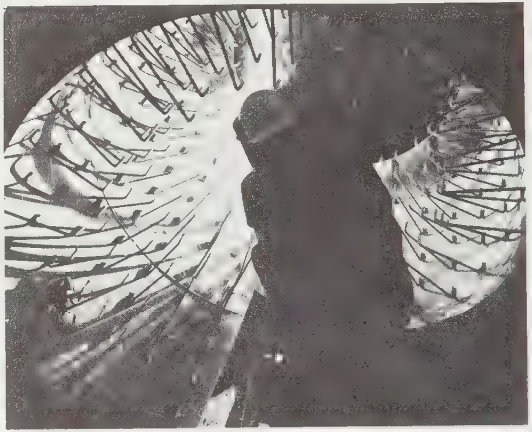
8A/Moon

1963 Welded steel, approx. 42 x 42 in. Collection of the Artist



8B/Stainless steel cyclone for dust extraction

Procor Limited, Oakville, Ontario

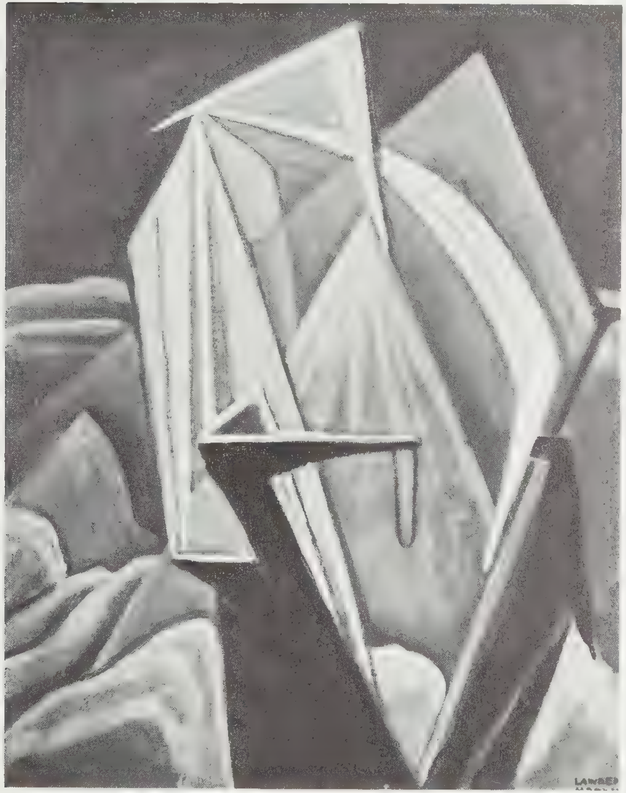


Lawren Harris/1885-

"I have always aimed at
a harmonious relationship
of color, line and space."

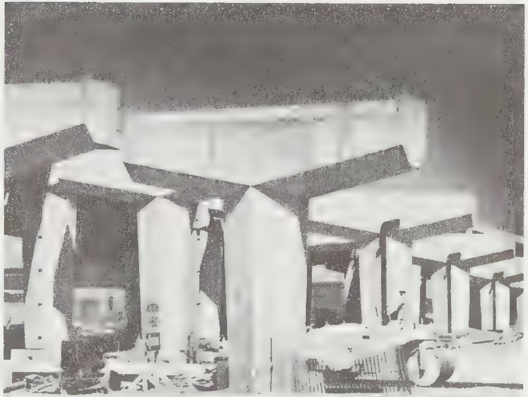
9A/Abstract Sketch

c.1940 Oil on cardboard, 14-3/4 x 12 in. The Art Gallery of Toronto
Gift from the McLean Foundation, 1959



9B/Gardiner Expressway: "Piers"

Lakeshore Expressway Consultants Limited
1. A. D. Margison & Associates Limited
2. De Leuw Cather & Co. of Canada Limited

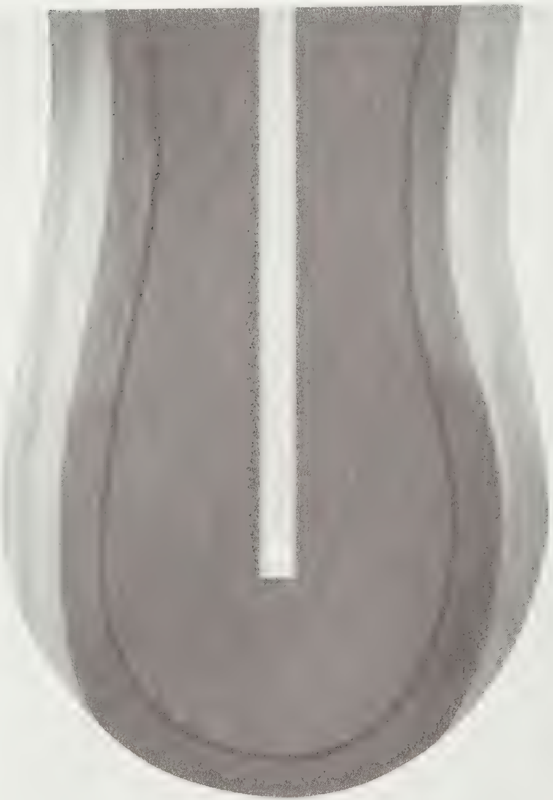


Roy Kiyooka /1926-

"for myself, it is not enough that a painting, any painting, reflect the engineered world we live in.
not enough that a painting look like an enormous coca-cola ad.
not enough that a painting look as if it came hot off the press with the latest mutilation.
not enough that it be hard or soft edge, not enough that it crackle, snap or pop. nor is the issue of a painting, any painting, a question of whether it is real or surreal, whether it appeals or reveals. for others, perhaps, these are possibilities; but for myself a painting, any painting, has to reflect, however possible, my sense of order behind the surface of things. for me, then, a painting is a celebration — of this order."

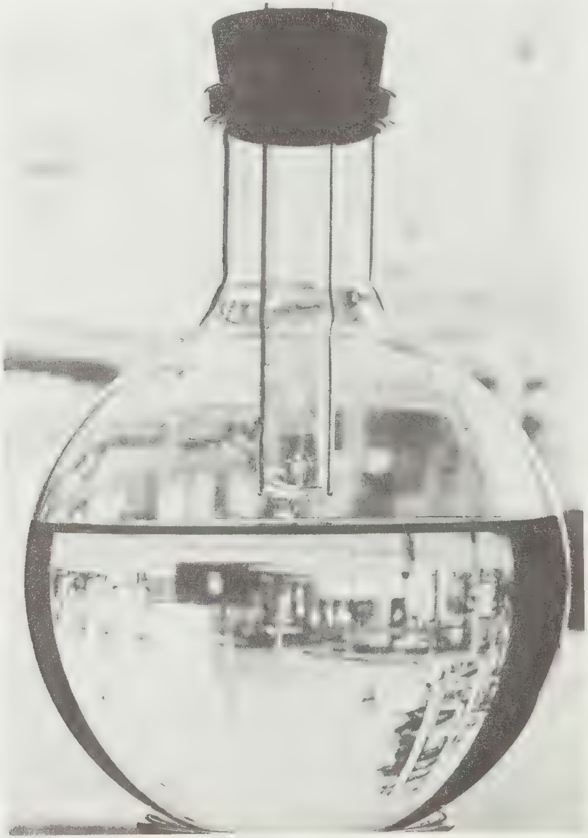
10A / **Barometer #2**

1964 Polymer on canvas, 97 x 69 in. The Art Gallery of Toronto
Gift from the McLean Foundation, 1964

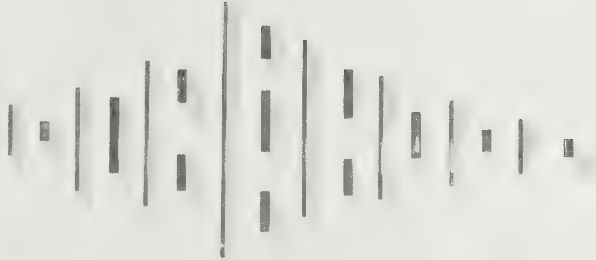


10B / **Chemical engineering process**

British American Oil Company Limited,
Clarkson Refinery



Gino Lorcini /1923-



11A/**Alpha I**

1964
Structural Relief,
36 x 24 in.
Collection of the Artist

11B/**Element grid air pre-heater**

James Howden & Parsons
of Canada Limited

"The common aim of scientist and artist is surely to bring Man's physical and spiritual being into closer correspondence with the world about him.

"Following *Nature's* structural process, evolving man moves toward unity and interdependence: **Space** and **Time** become **Space-Time.**

"It seems reasonable that the Artist (1965) look to the **thinking** world of Science (1965) for his material which he uses to provide others, the scientist included, with **feeling** experience.

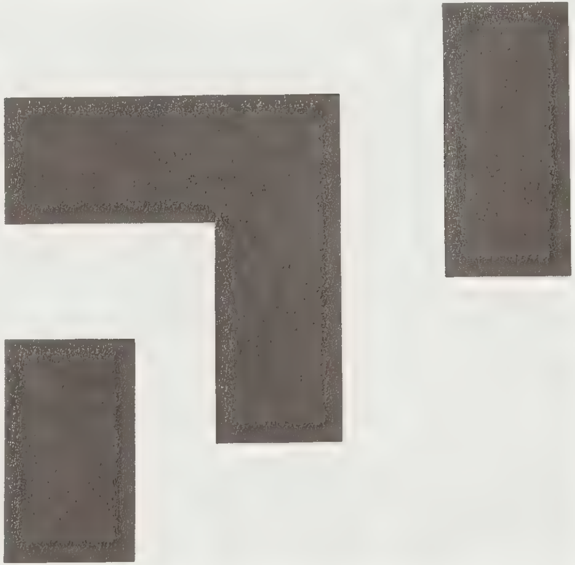
"In keeping with the **Mind-Body** concept of medical science, the **Artist-Scientist** (the Artist who makes use of accumulated knowledge, and sees relationships with disciplines other than his own) can aid in the development of an *integrated*, or **thinking-feeling** Man . . . a necessity for survival. in the environment of geometrical progression."

Guido Molinari /1933-

"Ever since I was preoccupied with the destruction of perspective, I have been involved, like engineering, in the elaboration of new structures, that is new plastical structures. In these white and black paintings of 1956, I was dealing with the problems of tensions in the surface and with the notion of masses always related with the gravitational phenomena. Finally emerged a conception of the whole where each surface or form is considered as a unit which has various functions, like the multiple relations of forms, the interaction of related masses and different light intensities. The unity of the integrated whole is the final goal, resulting from the interactions of the many dynamic forces and enfolding the spatial structure of the painting."

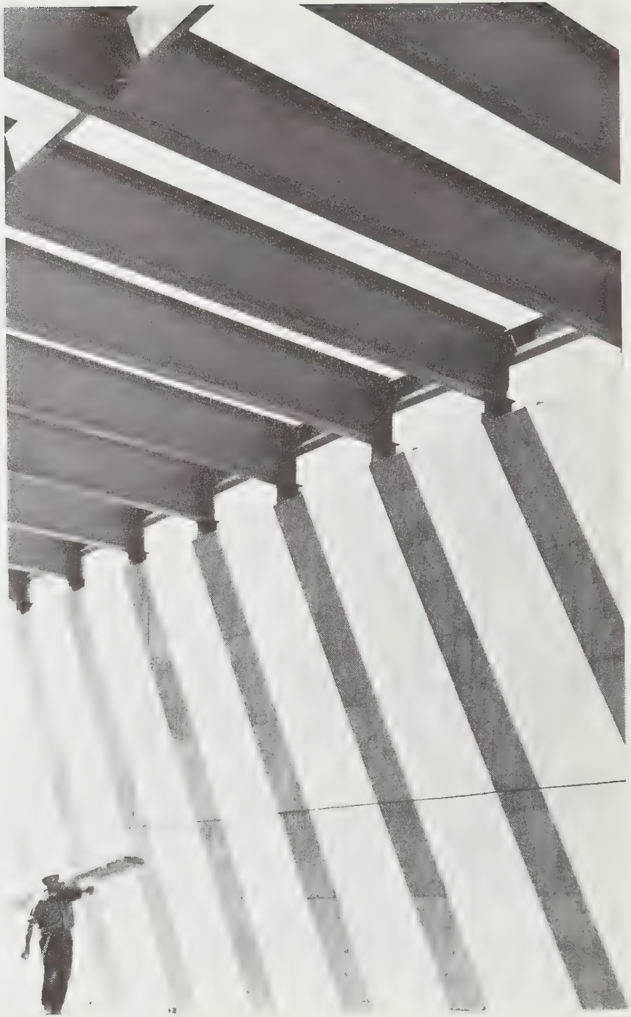
12A / **Angle Noir**

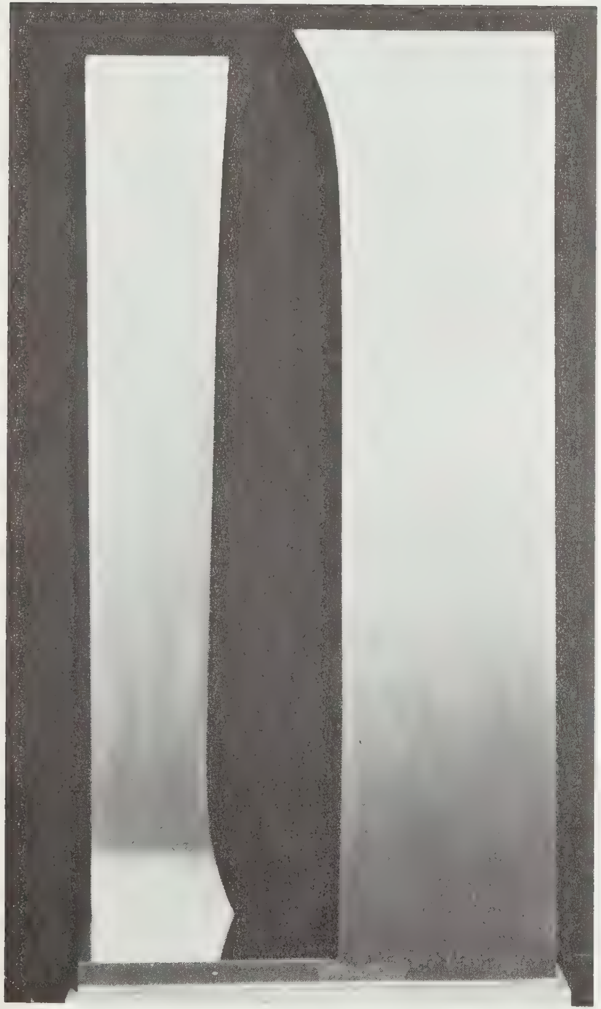
1956
Acrylic latex on canvas,
60 x 72 in.
Collection of the Artist



12B / **Bridge at Islington and 401 : Single span rigid frame**

Creator : Bruce Davis,
Professional Engineer and
the staff of the Bridge Office,
Ontario Department of Highways



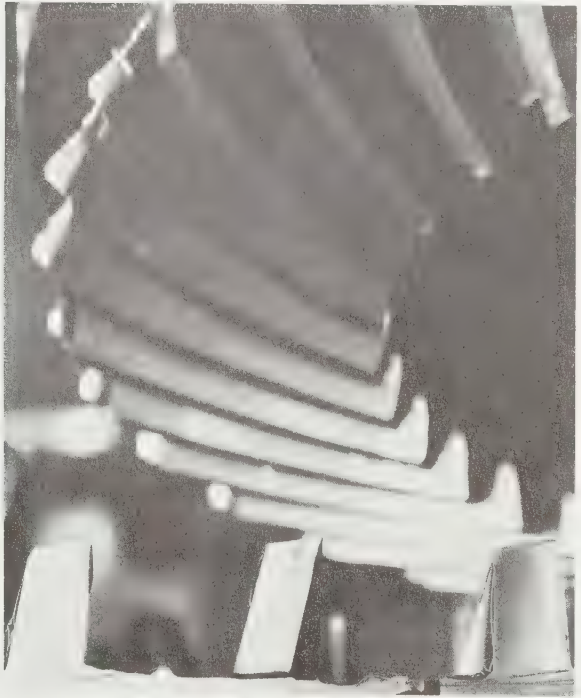


13A /Nunc Dimitis

1961-63
Aluminum, height 17 in.
Jerrold Morris International
Gallery Limited

13B /Spiral bevel gear cutter

Approx. size of cutting
tools 3/4 in.
Hamilton Gear & Machine
Company

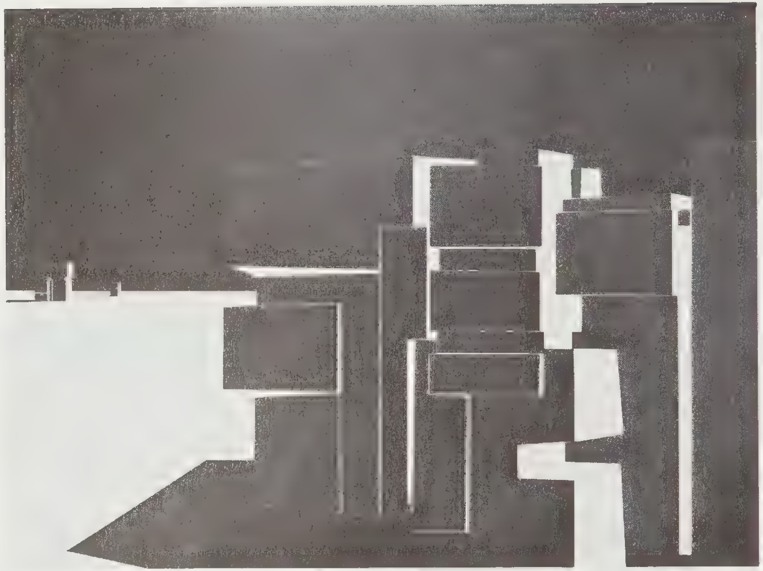


Robert Murray/1936-

"Whatever the similarities of material and form that invite superficial comparison, the intention of the engineer or the scientist will never coincide with that of the sculptor—nor does the imitation of scientific objects necessarily imply a concern for the problems of contemporary sculpture. What I wish to have understood about my work are these differences.
I want people to see the transformation of material into an object important to them as a total confrontation, not as so many bits and pieces which call to mind something else. My intention is to move the interested viewers from the known toward the unknown; to involve them with an invented form. If they can't see at a glance that it is steel or bronze or plastic, that it is fabricated or cast, and go on from there, then placing the sculpture next to a telephone standard or a missile will not likely help them over their dilemma."

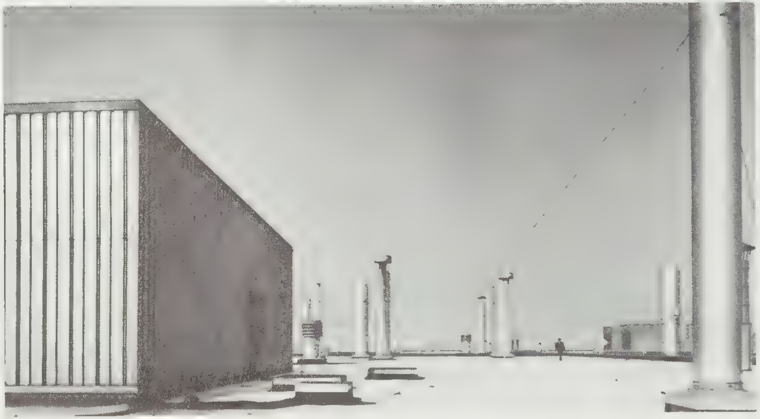
Kazuo Nakamura /1926-

"Man is influenced not only by nature and himself as a natural being, but also by himself as a creative and constructional being. Art and engineering are both man's creations, interrelated because art is the quality of 'visual feelings' and the processes and products of engineering are, or can be, visual and experienced. Engineering in art is the 'functional-structural' or the 'functional-organizational' given 'free' and meaningful expression in paintings, sculptures, etc. Art in engineering is the spirit and the perception of creativity in the design of the functional."



14A /**Fortress**

1956
Oil on panel, 36 x 48 in.
Collection of the Artist



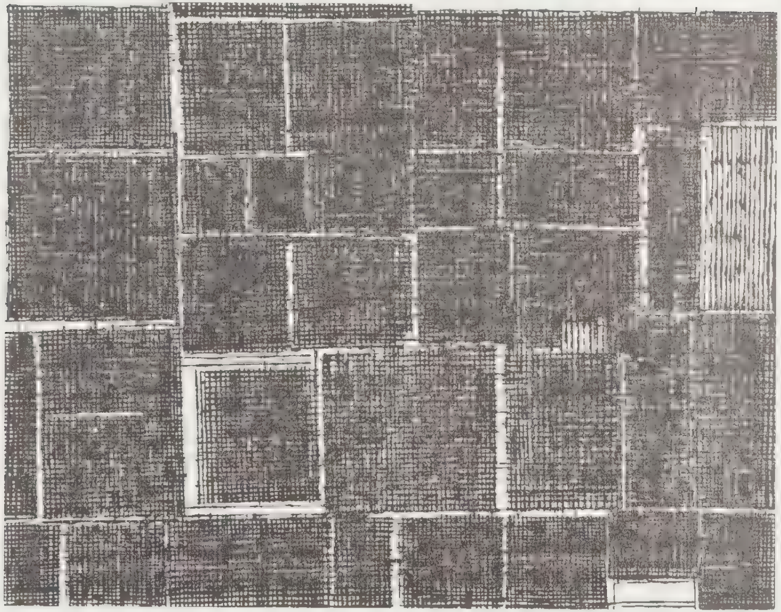
14B /**Ford Plant, Oakville: equipment stacks**

Designer
Giffels Associates Limited

Kazuo Nakamura

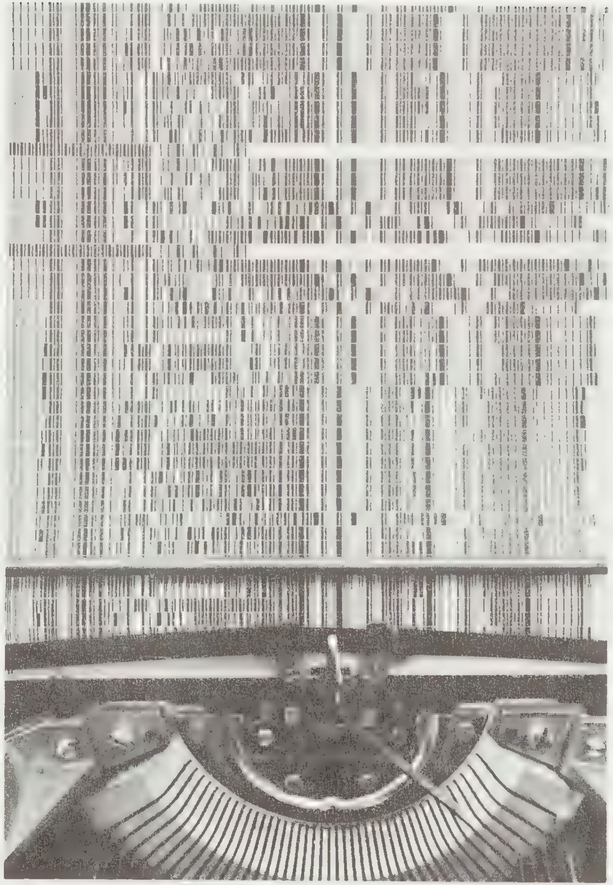
15A / **Black Structure**

1961 Oil on canvas, 24 x 31 in. Jerrold Morris International Gallery Limited



15B / **Document transcriber for Spiegel director card**

Ferranti-Packard Electric Limited



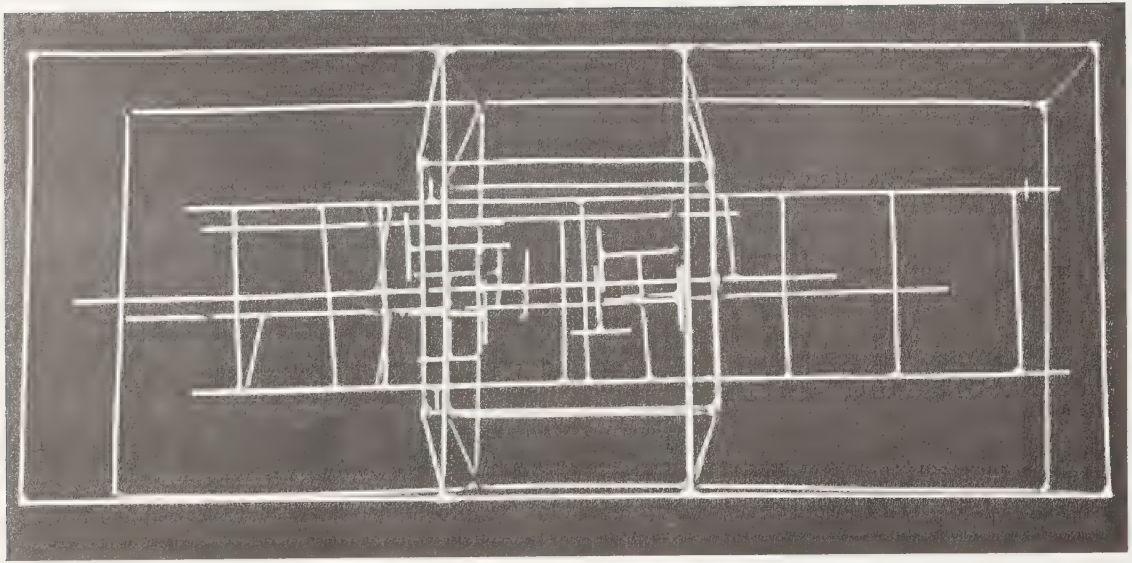
Kazuo Nakamura

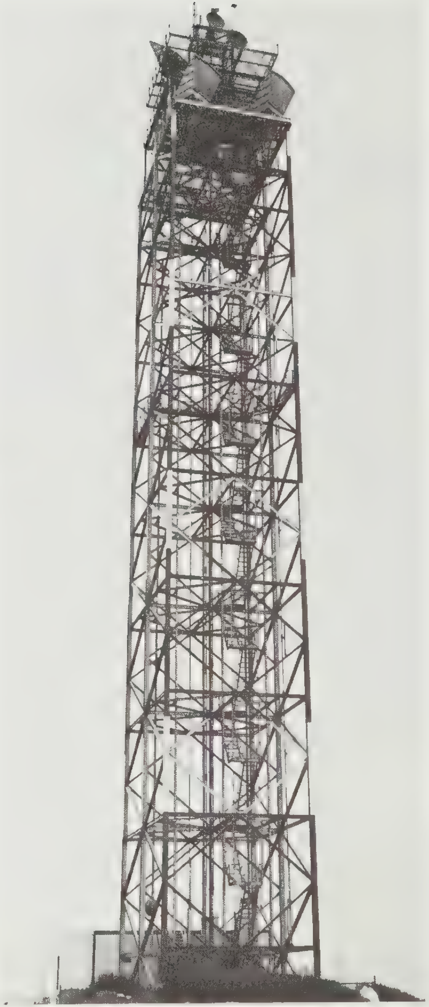
16A / **Galaxy No. 3**

1963
Soldered galvanized steel wire,
length 23 in.
Collection of the Artist

16B / **Radio relay microwave tower**

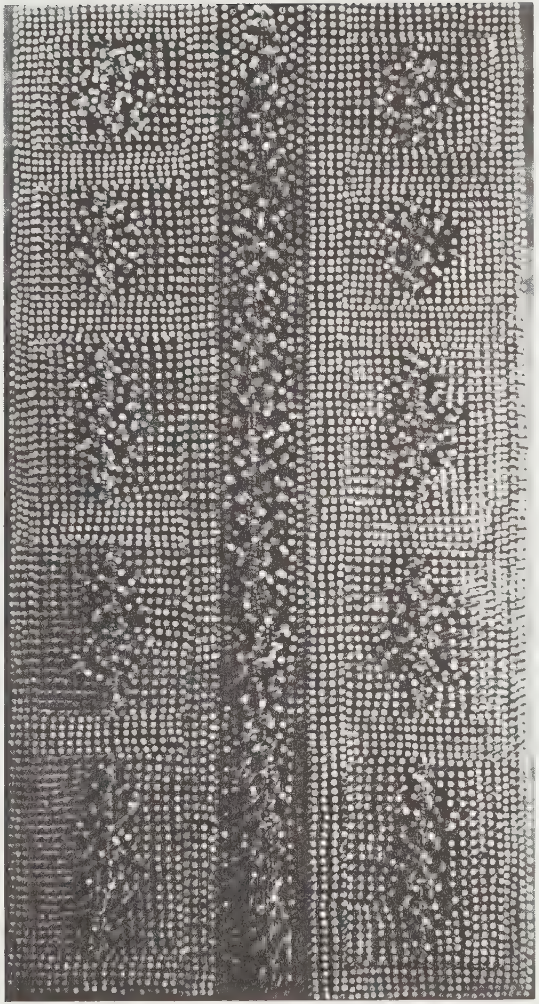
Bell Telephone Company of Canada





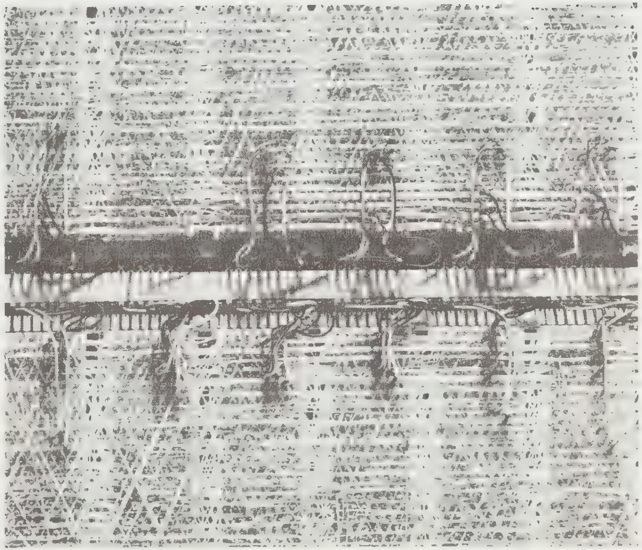
David Partridge/1919-

"While at university I took one interesting course of Geology and Palaeontology; my first practical drawings were of fossils and geological formations. These early experiences have become quite unconsciously more and more apparent in my work. Added to this as a prime influence was the experience of being a pilot during the war and flying extensively over Northern Ontario. Neither my paintings nor my nail configurations set out to reproduce either fossils or aerial views – but I am coming to realize that the finished articles almost invariably contain both of these experiences."



17A/**Panel Configuration**

1963
Nail construction,
71 x 37 in.
Jerrold Morris International
Gallery Limited



17B/**Wiring for Computer Circuitry**

International Business
Machines Company Limited

Michael Snow/1929-

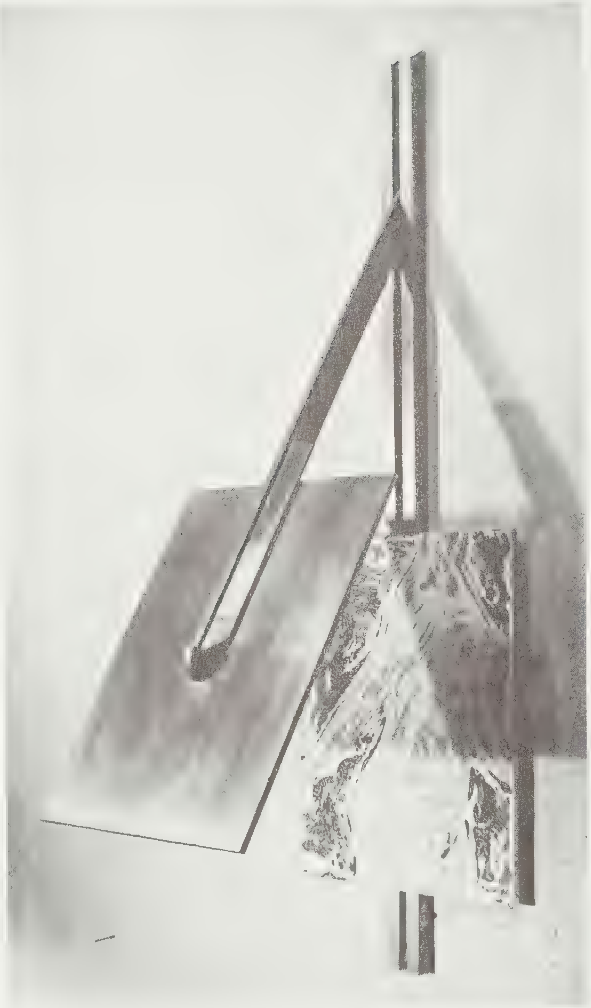
"All man-made images, objects and events are more or less Art.

"Making things and events enter experience as profoundly as possible is an aspect of Art which will have to merge with an exploration of the possible aesthetic factors in machine processes.

"Mass produced Art will be a phase directed toward a synthesis of plastic and time expressions.

"Categories are a form of poetry and the perception of an object or event ought to employ whatever range of means the perceiver chooses (and especially) is capable of.

"Propaganda, Mathematics, Forgery, Chemistry may be Art or Engineering."

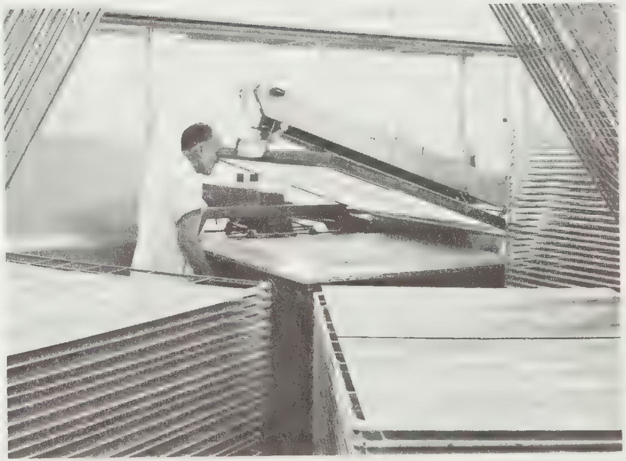


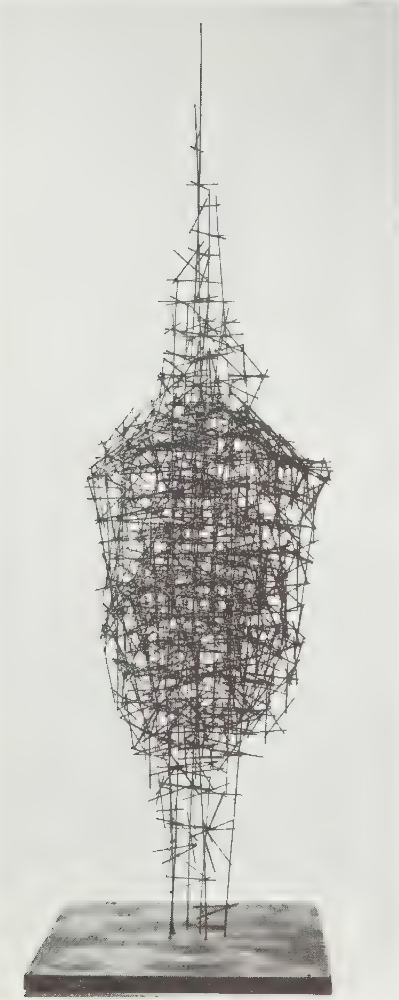
18A/**Register**

1964
Painted wood construction,
81 x 25 x 30 in.
Collection of the Artist

18B/**Silk screen automatic cycling printing press**

Sampson Matthews Limited



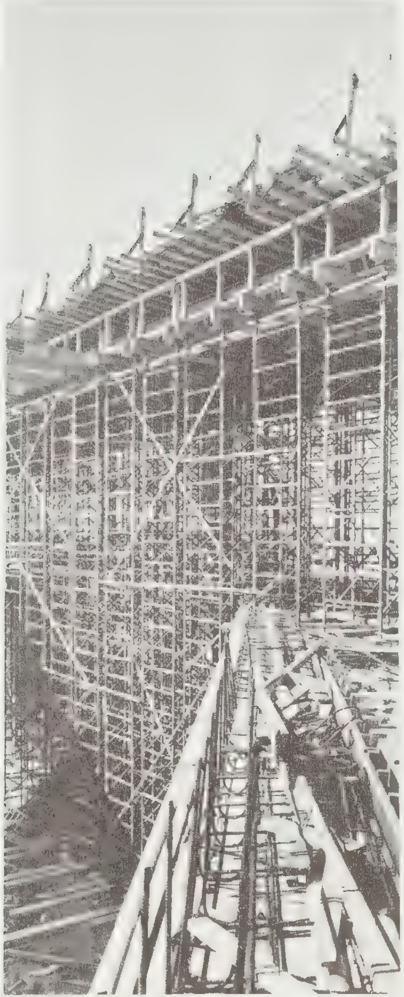


19A/**Tower**

1960
Split bamboo construction,
height 33-1/2 in.
The Art Gallery of Toronto
Gift of
Mr and Mrs H. R. Jackman,
1964

19B/**Spadina and 401 Interchange: False Work**

Creator: Bruce Davis,
Professional Engineer and
the staff of the Bridge Office,
Ontario Department of Highways



Ronald Spickett/1926-

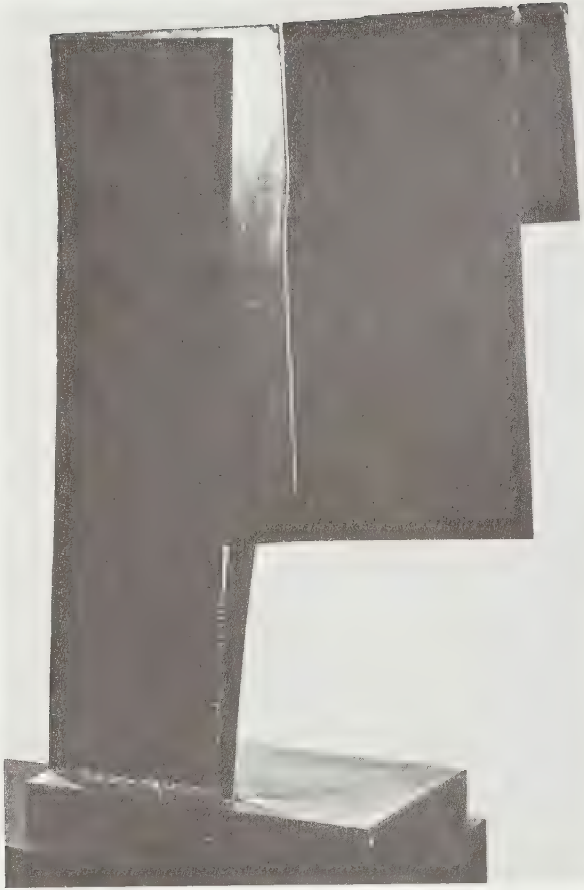
"The construction was one of a series done in 1960 relating to enamel paintings I was doing at that time based on prairie space and textural-structural elements of grass, bush, etc. The bamboo was chosen as an expedient and economic material to explore skeletal tension and delicate mass. The two-dimensional paintings often suggested the need of depth movement and consequently the constructions opened up new and interesting possibilities for optical experience in light and movement while retaining an airy and light substance.

"The ideas have since been translated into metal and other materials and variations continue to appear."

Françoise Sullivan

"The artist is naturally affected by the new developments of science and technology, and though not illustrating it, it is often reflected in his work.

"It is inevitable that the work of the artist who is aware of the dynamic forces around him and who uses the materials provided by modern industry will communicate this symbolism."

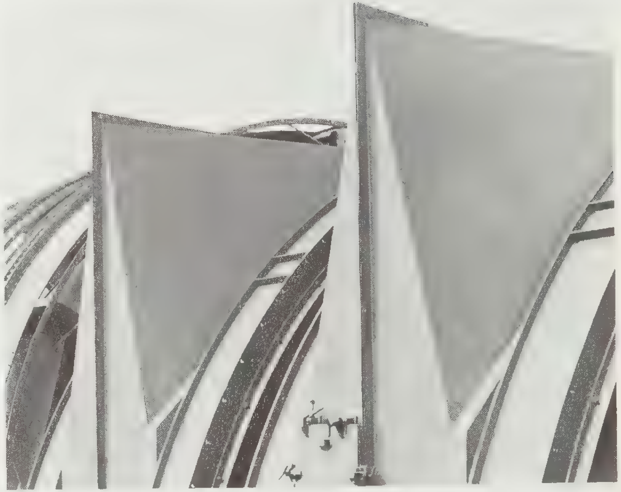


20A / **Split Power Grid**

1963
Welded steel,
43 x 26 ins.
Dorothy Cameron
Gallery Limited

20B / **Air pre-heater: connecting plate ducting**

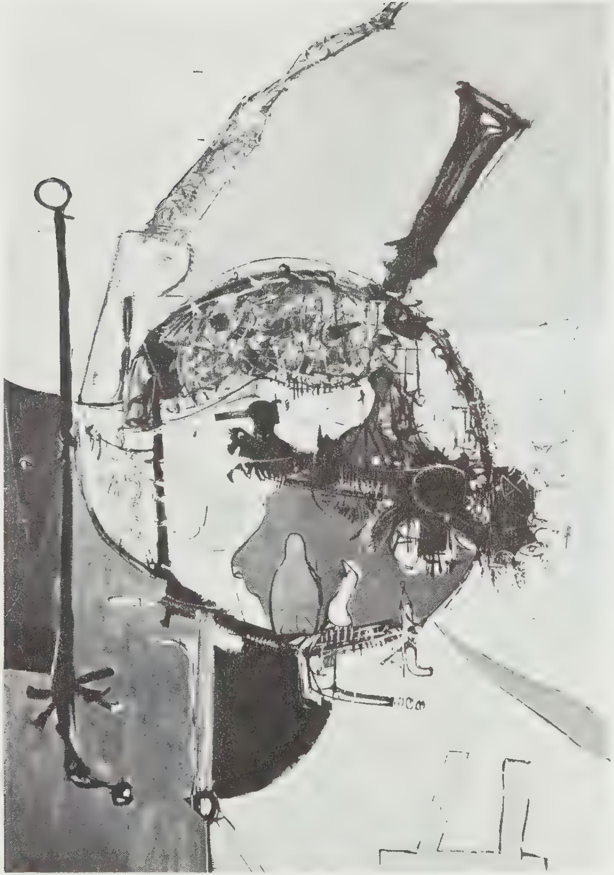
James Howden & Parsons
of Canada Limited
Height approx. 20 ft.



Harold Town /1924-

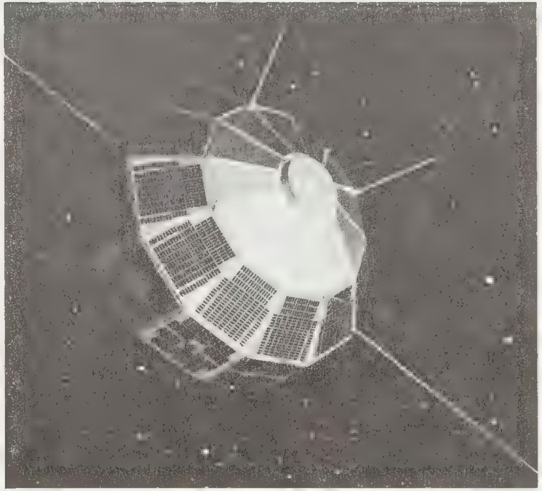
"Again I would like to repeat my by now platitudinous remark . . . 'The explanation of painting should be left to poets for there is authentic grandeur in their misunderstanding'. Explanations of art by artists add only smoke to what should be pure fire, explanations by scholars add the odour of burning rubber, and critics douse the flame entirely with the murky liquids of forever oozing egos.

"Naturally, I have been interested in man and his mechanistic environment; how can one live in the twentieth century and not be? Unfortunately, in 1951, when this confrontation was my main creative impulse, no one could be induced to look at the pictures it produced."



21A/**Space Machine**

1959
Oil on canvas,
108 x 80-1/2 in
Collection of the Artist



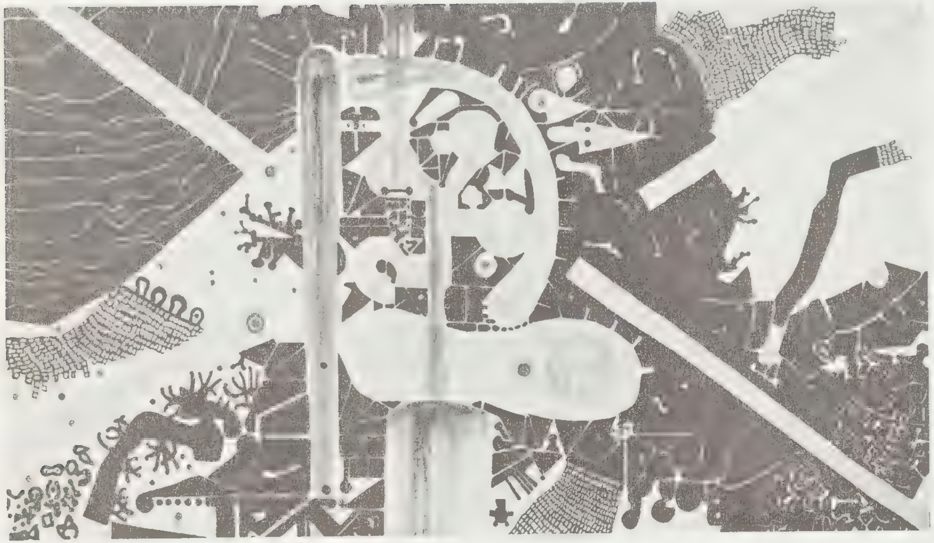
21B/**Alouette I**

Diameter 42 in.
Designed and Manufactured
by De Havilland Aircraft
of Canada Limited

Harold Town

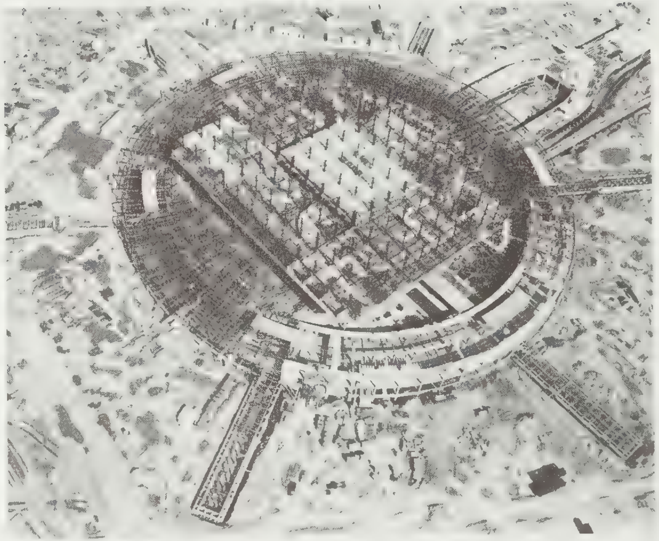
22A / **Sketch for airport mural**

1962 Oil on canvas, 24-1/2 x 42-3/4 in.
Department of Transport – Chief Architect's Office



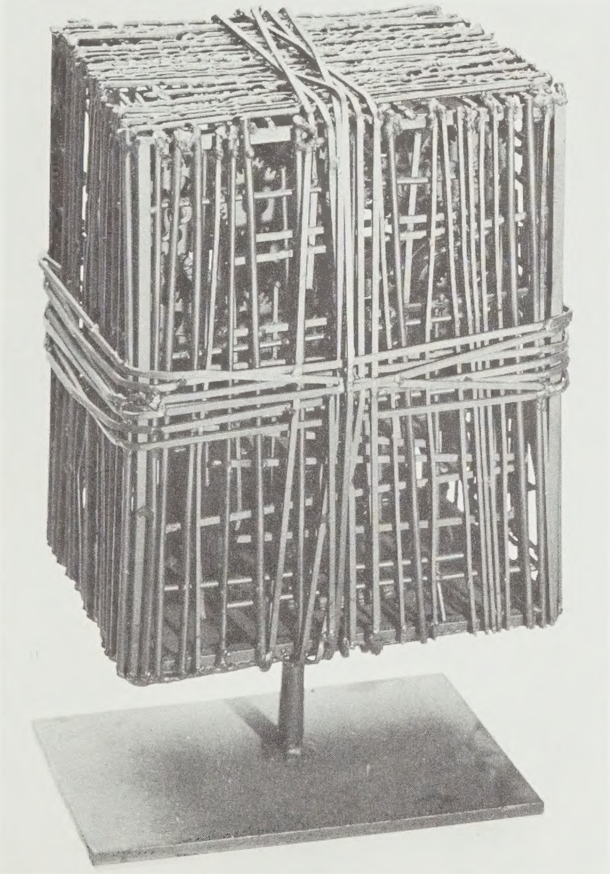
22B / **Toronto International Airport**

York Steel Construction Limited



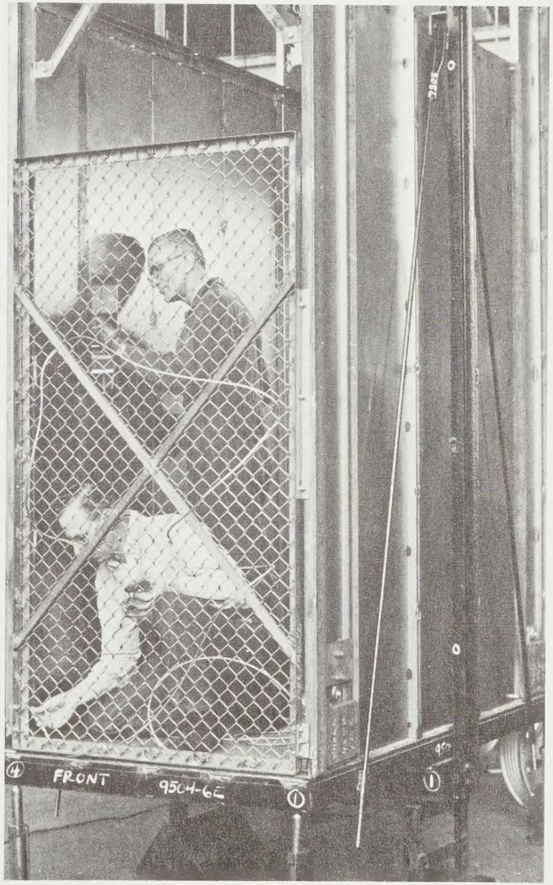
23A / **Prisoner**

1962 Found object and welded steel, height 22-1/2 in.
The Art Gallery of Toronto Purchase, 1963



23B / **Freight elevator**

Turnbull Elevator
of Canada Limited



Walter Yarwood / 1917-

"I am moved more by a thistle than by a thruway."

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Frank Newfeld

Photography

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Thomas Feist, New York, no. 10A

J. S. Markiewicz, London, England, no. 17A

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